CLAIMS:

1. A method of motion artifact compensation in a projection data set of an object of interest, wherein the projection data set is acquired by means of a source of electromagnetic radiation generating a beam and by means of a radiation detector detecting the beam, the method comprising the steps of:

- compensating the projection data set for a motion artifact on the basis of the difference, resulting in a motion artifact compensated projection data set;
- reconstructing the object of interest from the motion artifact compensated projection data set, resulting in a motion artifact compensated image;
- wherein a first ray and a second ray create projection data of the projection data set;
- wherein the first ray and the second ray are opposite rays passing through a single object point;
- determining a difference of the projection data of the first ray and the projection data of the second ray; and
- wherein the difference of the projection data of the first ray and the projection data of the second ray is due to the motion of the object of interest resulting in motion artifacts.

2. The method according to claim 1,

- wherein the determination of a difference between the first ray and the second ray further comprises the steps of:
- selecting the first ray and the second ray on the basis of the projection data;
- determining, whether the difference between the first ray and the second ray is bigger than a predetermined threshold;
- wherein, if the difference is bigger than the predetermined threshold, a motion artifact compensation of the projection data set is performed.

3. The method according to claim 1, wherein the second ray is interpolated from adjacent rays.

4. The method according to claim 1,

- wherein the object of interest comprises a plurality of object points;
- wherein a reconstruction of a first object point of the plurality of object points is performed by an exact reconstruction algorithm; and
- wherein, if the motion artifact results from a motion of the first object point, the motion artifact is compensated for by a low pass filtering of the projection data in the region of the motion artifact before the reconstruction of the first object point by the exact reconstruction algorithm.

5. The method according to claim 4,

- wherein the source of radiation moves around the object of interest; and
- wherein the exact reconstruction algorithm uses projection data resulting from one of half a revolution and three half revolutions of the source of radiation.

6. The method according to claim 4, wherein characteristics of the low pass filtering correspond to properties of the projection data in the region of the motion artifact.

7. The method according to claim 1,

- wherein the object of interest comprises a plurality of object points;
- wherein a reconstruction of a first object point is performed by an approximate reconstruction algorithm;
- wherein an over-scan range is used for reconstruction of the first object point; and
- wherein, if the motion artifact results from a motion of the first object point, the motion artifact is compensated for by increasing the over-scan range.

8. The method according to claim 7,

- wherein the first object point belongs to a PI-line on which motion has been detected; and
- wherein the increase of the over-scan range corresponds to properties of the projection data in the region of the motion artifact.

9. The method according to claim 7, wherein the approximate reconstruction algorithm is one of a WEDGE algorithm and a PI-filtered back-projection algorithm.

10. The method according to claim 1,

- wherein the source of electromagnetic radiation is a polychromatic x-ray source;
- wherein the source moves along a helical path around the object of interest; and
- wherein the beam has one of a cone beam and a fan beam geometry.

11. A data processing device comprising:

- a memory for storing a data set;
- a data processor for performing motion artifact compensation in a projection data set of an object of interest, wherein the data processor is adapted for performing the following operation:
- loading the data set acquired by means of a rotating source of electromagnetic radiation generating a beam and by means of a radiation detector detecting the beam;
- compensating the projection data set for a motion artifact on the basis of the difference, resulting in a motion artifact compensated projection data set;
- reconstructing the object of interest from the motion artifact compensated projection data set, resulting in a motion artifact compensated image;
- wherein the first ray and the second ray create projection data of the

projection data set;

- wherein the first ray and the second ray are opposite rays passing through a single object point;
- determining a difference of the projection data of the first ray and the projection data of the second ray; and
- wherein the difference of the projection data of the first ray and the projection data of the second ray is due to the motion of the object of interest resulting in motion artifacts.

12. A computer program for performing motion artifact compensation in a projection data set of an object of interest, wherein the computer program causes a processor to perform the following operation when the computer program is executed on the processor:

- loading the data set acquired by means of a rotating source of electromagnetic radiation generating a beam and by means of a radiation detector detecting the beam;
- compensating the projection data set for a motion artifact on the basis of the difference, resulting in a motion artifact compensated projection data set;
- reconstructing the object of interest from the motion artifact compensated projection data set, resulting in a motion artifact compensated image;
- wherein the first ray and the second ray create projection data of the projection data set;
- determining a difference of the projection data of the first ray and the projection data of the second ray; and
- wherein the difference of the projection data of the first ray and the projection data of the second ray is due to the motion of the object of interest resulting in motion artifacts..